A40750

Anthropometric features and myocardial infarction in very elderly people

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A new age configuration of world's population age is occurring due to life expectancy augmentation and birth rate reductions. Aging is raising deaths by cardiovascular diseases, which is a trending cause of death among the very elderly. Sarcopenia, cell senescence and frailty syndrome are usually involved in functional disability commonly observed during the aging process, and also associated to atherosclerotic disease. This study aims to assess the association between anthropometric features and the occurrence of ST segment elevation myocardial infarction (STEMI) in the very elderly. A case–control study was carried out with 80 years or older participants: 50 were STEMI patients (cases) and 207 were free of manifested cardiovascular disease (controls). Anthropometric features were obtained by height, weight, abdominal circumference and 4-skinfold measures. Fat body mass was calculated by Durnin and Womersley method. In univariate analysis, t-Student and Mann–Whitney tests were used for continuous variables with normal and no-normal distribution, respectively; and chi-square was used for categorical variables. Multivariate analysis was carried out by binary and ordinal logistic regression to assess the association between anthropometric features and STEMI. Population-attributable risk (PAR) was calculated for each significant independent predictor (with a p-value <0.05). Differently from young adults, the body mass index augmentation seems not to be associated to STEMI in the very elderly (OR: 0.44 [95% CI 0.18–1.11]; $p = 0.082$). However, the increasing percentage of overall body fat and abdominal circumference seem to protect very elderly participants from STEMI occurrence (OR: 0.26 [95% CI 0.10–0.69]; $p = 0.007$ and OR: 0.20 [95% CI 0.08–0.49]; $p = 0.001$, respectively). Advancing of age has no influence on STEMI occurrence. The PAR for low abdominal circumference is 43.34% [95% CI 12.21–63.44] and for low body fat percentage is 52.00% [95% CI 15.92–77.30]. As a conclusion, the causal factors of cardiovascular diseases for young adults seem to be different in the very elderly. Probably, lowering of body fat – including abdominal fat – could be directly associated to elderly frailty, increasing the cardiovascular risk of STEMI.

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Body constitution and subclinical atherosclerosis in very elderly people

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A new age configuration of world's population age is occurring due to life expectancy augmentation and birth rate reductions. Aging is raising deaths by cardiovascular diseases, which is a trending cause of death among very elderly. Sarcopenia, cell senescence and frailty syndrome are usually involved in functional disability commonly observed during aging process, and are also associated with atherosclerotic disease. This study aims to assess the association between anthropometric features and the subclinical atherosclerosis in the very elderly. Enrolled participants were completely free of manifested cardiovascular disease ($n = 209$). Body constitution – muscle, fat and bone mass – was obtained by dual-energy X-ray absorptiometry (DEXA). Coronary Artery Calcium (CAC) score was used to assess subclinical atherosclerosis. In univariate analysis, ANOVA and Kruskal–Wallis tests were used for continuous variables with normal and no-normal distribution, respectively; and chi-square was used for categorical variables. Multivariate analysis was carried out by ordinal logistic regression to assess the association between some elements of the body constitution and subclinical atherosclerosis. Significant independent predictor was considered, if p-value <0.05. In the very elderly, the overall fat mass seems to be not associated to subclinical atherosclerosis (OR: 1.47 [95% CI 0.61–3.54]; $p = 0.395$), but the appendicular fat percentage shows a direct relation to the CAC score in this population (OR: 2.65 [95% CI 1.12–6.25]; $p = 0.026$). Otherwise, the overall bone and muscle mass are oppositely related to CAC score (OR: 2.69 [95% CI 1.15–6.28]; $p = 0.022$ and OR: 2.87 [95% CI 1.19–6.63]; $p = 0.018$; respectively), whereas the appendicular muscle percentage seem to underlie this same relation (OR: 2.65 [95% CI 1.12–6.25]; $p = 0.026$). Bone percentage has not shown any association to CAC score. As a conclusion, in very elderly people, some elements of the body constitution seem to be associated to subclinical atherosclerosis. Appendicular fat percentage showed a direct association to CAC score. Sarcopenia and osteopenia, well-known aging mechanisms involved in atherosclerotic disease, were confirmed in our results by the opposite relation of appendicular muscle percentage, overall bone and muscle mass lowering to the increased CAC score.

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Biopsychosocial features and myocardial infarction in very elderly patients

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The increasing life expectancy and the reducing birth rate are contributing to a fast aging process of world population. Aging and population growth are increasing the rate of cardiovascular mortality, turning it up the leading cause among very elderly individuals. ST-segment elevation myocardial infarction (STEMI) is an uncommon condition, but highly fatal among the very elderly. Thus, this study aims to assess the biopsychosocial features that could be associated to STEMI in very elderly individuals. A case–control study was carried out with 80 years or older participants: 50 were STEMI patients (cases) and 207 were free of manifested cardiovascular disease (controls). Biopsychosocial features were evaluated by laboratorial tests, clinical examinations and psychological tests, such as Beck's Depression Inventory and Geriatric Depression Scale. In univariate analysis, t-Student and Mann–Whitney tests were used for continuous variables with normal and no-normal distribution, respectively; and chi-square was used for categorical variables. To assess the association between biopsychosocial variables and STEMI, multivariate analysis was carried out by binary and ordinal logistic regression models. Population-attributable risk (PAR) of each significant independent predictor (with a p-value <0.05) and 95% confidence intervals (95% CI) were calculated. Six biopsychosocial features were identified as independent predictors of STEMI in very elderly individuals: current smoking (OR: 6.58 [95% CI: 1.99–21.70]; $p = 0.002$. PAR: 9.79%), moderate to severe depressive symptoms

(OR: 10.00 [95% CI 2.82–35.50]; p = 0.001. PAR: 16.67%), ex smoking (OR: 2.00 [95% CI: 1.05–3.80]; p = 0.034. PAR: 21.01%), low glomerular filtration rate (GFR) (OR: 4.41 [95% CI: 1.78–10.95]; p = 0.001. PAR: 54.84%), male gender (OR: 12.08 [95% CI: 5.82–25.08]; p = 0.001. PAR: 64.95%) and low HDL-cholesterol (OR: 10.91 [95% CI: 3.64–32.65]; p = 0.001. PAR: 76.65%). In conclusion, six biopsychosocial predictors were associated to STEMI risk. In our findings, the reduced levels of HDL-cholesterol and GFR are the strongest modifiable predictors of STEMI in very elderly individuals, followed by male gender, ex smoking, depressive symptoms and current smoking.

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A40772

Analysis of quality of life: Relationship among body mass index, physical activity and cardiovascular health

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Introduction: The quality of life (QL) depends on the perception that the person has with respect to herself. The QL of an individual involves aspects such as: economic resources, environment, relationships, religion, work, leisure, physical activity and physical and mental health. For this reason, it is important that people adopt healthy attitudes such as good nutrition and regular physical activity, decreasing cardiovascular risk and increasing life expectancy. Objective: To assess QL in individuals practitioners and non-practitioners of physical activities with high or normal Body Mass Index (BMI). Methods: This is a quantitative qualitative study, conducted with 83 individuals of both genders, aged between 20 and 40, students of Physical Education of the night shift at the college "Faculdade Dom Bosco", in the city Curitiba, state Paraná, Brazil. All participants filled out the Short Form questionnaire (SF-36), through which we performed the analysis of the quality of life. Results: This study showed that the high BMI group had a significant limitation due to physical aspects ($p \leq 0.02$). Nevertheless, there were no differences in any of the other dimensions measured by SF-36 ($p \geq 0.05$). Conclusion: Physical activity contributes to the QL of individuals between 20 and 40 years old with normal and high BMI, however, the high BMI negatively impacts the daily physical activities of practitioners and non-practitioners of physical activities, having impacts on the cardiovascular health.

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The hypertension paradox: ACE inhibitors or ARB attenuate mortality in hypertensive patients undergoing myocardial infarction

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Introduction: Elements that increase mortality, such as an atherosclerotic burden, oxidative stress and arterial and ventricular remodeling, commonly accompany hypertensive disease. However, a hypertension diagnosis does not increase or may even decrease mortality in the post myocardial infarction period, according to previous studies. We hypothesize that the frequent prescription of angiotensin converting enzyme (ACE) inhibitors or angiotensin II receptor blocker (ARB) in hypertensive, as opposed to non-hypertensive patients, would attenuate mortality in this context. Objectives: To evaluate the impact of the ARB or ACE inhibitors use on 30-day mortality after ST elevation myocardial infarction (STEMI) in patients with or without hypertension diagnosis. Methods: Consecutive STEMI patients from a prospective observational cohort (n = 540) were followed and all-cause mortality in 30 days was considered the primary outcome. Patients were categorized according to ARB or ACE inhibitors previous and/or during hospitalization use. Statistical analysis: Univariate comparisons were performed using analysis of variance (ANOVA) and Chi-square test. Cumulative incidence of events was evaluated by the Kaplan–Meier method and survival curves compared by means of the log rank test. To adjust for covariates Cox regression models were applied. Results: Consistent with previous studies, STEMI 30-day mortality did not differ among hypertensive and non-hypertensive patients. As expected, hypertensive patients were more frequently prescribed ARB or ACE inhibitors (p = 0.04), even after adjustment to anterior wall STEMI and to presence of Diabetes. Hypertensive patients who did not receive ARB nor ACE inhibitors neither before nor during hospitalization (n = 60) had the highest percentage of the outcome (13.6%), followed by non-hypertensive patients who did not receive neither drug (n = 98) neither before nor during hospitalization (7%), non-hypertensive patients who received the drugs in either moment (n = 117) (6%), and hypertensive patients who received the drugs in either moment (n = 263) (5.7%); ($p \leq 0.001$). Conclusion: The frequent prescription of ARB or ACE inhibitors to hypertensive patients may, at least in part, explain the apparent reduced-mortality paradox of hypertensive patients when undergoing MI.

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Neuronal nitric oxide synthase polymorphism reduces endothelial function, increases sympathetic activity and recurrent cardiovascular events after myocardial infarction

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Purpose: The expression and activity of neuronal nitric oxide synthase (nNOS) in central and peripheral nervous system attenuate the sympathetic response and promote other cardioprotective effects in animal models. However in humans those effects are uncertain. A polymorphism at the sequence rs41279104 G/A has been associated with a reduced expression of neuronal nitric oxide synthase. Hypothetically, this polymorphism can influence sympathetic responsiveness, thus the clinical course and mortality of patients with ST elevation myocardial infarction (STEMI). Therefore we investigated the impact of the A allele at rs41279104 in sympathetic activation, endothelial function and the incidence of recurrent cardiovascular events after STEMI. Methods: Consecutive patients were admitted in the first 24 h after STEMI. Blood samples and an electrocardiogram were obtained upon first 24 h and fifth day. We assessed glycosylated hemoglobin, glucose, insulin, C-peptide and lipid profile. We genotyped rs41279104 and grouped patients according to carrier